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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/823,832

04/14/2004

Masatoshi Homan

17640

5643

23389

7590

12/14/2006

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EXAMINER

KASZTEJNA, MATTHEW JOHN

ART UNIT

PAPER NUMBER

3739

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/823,832	Applicant(s) HOMAN ET AL.	
	Examiner Matthew J. Kasztejna	Art Unit 3739	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 September 2006.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9, 11, 14 and 16 is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 12, 13, 15 and 17-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 20, 2006 has been entered.

### ***Notice of Amendment***

In response to the amendment filed on September 20, 2006, amended claims 1, 7, 12 and 17-19 are acknowledged. The current rejections of the claims *stand*. The following reiterated grounds of rejection are set forth:

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8, 10, 12-13, 15 and 19-22 rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication No. 2003/0117491 to Avni et al.

**In regards to claims 1 and 21-22**, Avni et al disclose a capsule endoscope apparatus having an illuminating device 38 for irradiating illuminating light in a body cavity, a switching device which switches illuminating conditions of the illuminating light irradiated by the illuminating device (see Figs. 6-7), presets at least two different illuminating conditions and a switching order thereof, and automatically switches the illuminating conditions from a first illuminating condition 94 corresponding to a first image acquisition cycle (T-T1) to a second illuminating condition 96 corresponding to a subsequent image acquisition cycle (T1-T2) (see Fig. 8); an image pick-up device 32 for sequentially picking up an images of a subject, which is irradiated with illuminating light under the illuminating conditions which are different according to the switching by the switching device; and a radio device 34 which transmits by radio waves image data obtained by the image pick-up device upon sequentially switching the two or more light-emitting amount or light-emitting time (see Fig. 2 and paragraphs 0039-42 and 0074-0076).

**In regards to claim 2**, Avni et al disclose a capsule endoscope apparatus wherein the at least two different illuminating conditions are a light-emitting amount or light-emitting time, the capsule endoscope further comprising: a setting device which sets the light-emitting amount or light-emitting time (see paragraphs 0057-64 and 0075).

**In regards to claim 3**, Avni et al disclose a capsule endoscope apparatus, wherein the setting device is a storing device which stores information for setting the light-emitting amount or light-emitting time (see paragraph 0071).

**In regards to claims 4-5**, Avni et al disclose a capsule endoscope apparatus wherein the at least two different illuminating conditions are a light-emitting amount or light-emitting time, the illuminating device comprises a white LED (see paragraph 0039) and wherein the illuminating device comprises an electroluminescence.

**In regards to claim 6**, Avni et al disclose a capsule endoscope apparatus, wherein a signal gain of the image pick-up device is proportional to the light-emitting amount or light-emitting time (see paragraph 0719).

**In regards to claims 7 and 12**, Avni et al disclose a capsule endoscope apparatus having an illuminating device 38 for irradiating illuminating light in a body cavity, a switching device which switches illuminating conditions of the illuminating light irradiated by the illuminating device (see Figs. 6-7), presets at least two different illuminating conditions and a switching order thereof, and automatically switches the illuminating conditions from a first illuminating condition 94 corresponding to a first image acquisition cycle (T-T1) to a second illuminating condition 96 corresponding to a subsequent image acquisition cycle (T1-T2); an image pick-up device 32 for sequentially picking up an images of a subject, which is irradiated with illuminating light under the illuminating conditions which are different according to the switching by the switching device (see Fig. 2 and paragraphs 0039-42 and 0074-0076); a selecting device which extracts an image with a wide dynamic range from the two or more pieces of image data obtained by the image pick-up device upon sequentially switching the two or more light-emitting amount or light-emitting time (see Fig. 13 and paragraphs 0152-

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157); and a radio device 34 which transmits by radio waves the image data obtained by the selecting device (see paragraph 0036).

**In regards to claims 8, 10, 13 and 15**, Avni et al disclose a capsule endoscope apparatus, wherein a luminance distribution of the image data is used as a comparison standard for extracting the image with the wide dynamic range by the selecting device (see paragraphs 0070-0074).

**In regards to claim 19**, Avni et al. disclose a capsule endoscope apparatus having an illuminating device 38 for irradiating illuminating light in a body cavity, a switching device which switches illuminating conditions of the illuminating light irradiated by the illuminating device (see Figs. 6-7), presets at least two different illuminating conditions and a switching order thereof, and automatically switches the illuminating conditions from a first illuminating condition 94 corresponding to a first image acquisition cycle (T-T1) to a second illuminating condition 96 corresponding to a subsequent image acquisition cycle (T1-T2); an image pick-up device 32 for sequentially picking up an images of a subject, which is irradiated with illuminating light under the illuminating conditions which are different according to the switching by the switching device; and a radio device which transmits by radio waves the image data obtained by the image pick-up device (see Figs. 11-12).

**In regards to claim 20**, Avni et al disclose a capsule endoscope apparatus, wherein the illuminating device has a plurality of light-emitting elements at different

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arranging positions, and the switching device selects the light-emitting element which emits light from the plurality of light emitting element and changes the property of light distribution for the illuminating light (see Figs 11-12 and paragraphs 0129-136).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17-18 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 2003/0117491 to Avni et al. in view of EP 0912047 to Matsumoto et al.

**In regards to claims 17-18**, Avni et al. disclose a capsule endoscope apparatus having an illuminating device 38 for irradiating illuminating light in a body cavity, a switching device which switches illuminating conditions of the illuminating light irradiated by the illuminating device (see Figs. 6-7), presets at least two different illuminating conditions and a switching order thereof, and automatically switches the illuminating conditions from a first illuminating condition 94 corresponding to a first image acquisition cycle (T-T1) to a second illuminating condition 96 corresponding to a subsequent image acquisition cycle (T1-T2); an image pick-up device 32 for sequentially picking up an images of a subject, which is irradiated with illuminating light under the illuminating conditions which are different according to the switching by the switching device; a radio device which transmits by radio waves image data obtained by the image pick-up

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device but are silent with respect to an image processing device which generates one piece of combined image with an enlarged dynamic range from two or more pieces of image data. Matsumoto et al. teach of an analogous imaging apparatus comprising means for expanding the dynamic range of the images. Matsumoto et al. teach of a system wherein when a luminance level is low, the ratio of the first image signal, which has been produced during the longer exposure time, to the second image signal is increased. This results in an image demonstrating a high signal-to-noise ratio. When the luminance level is high the ratio of the second image signal, which has been produced during the shorter exposure time, to the first image signal is increased (see Fig. 2). This results in a synthetic image that provides a wide dynamic range, depicts a smoothly varying brightness level, and exhibits a characteristic of being seen almost natural. It would have been obvious to one skilled in the art at the time the invention was made to include an image processing device in the apparatus of Avni et al. in order to produce a single image with a large dynamic range from first and second image signals as taught by Matsumoto et al.

***Allowable Subject Matter***

Claims 9, 11, 14 and 16 are allowed.

***Response to Arguments***

Applicant's arguments filed September 20, 2006 have been fully considered but they are not persuasive.

Furthermore, applicant states Anvi fails to disclose a capsule apparatus having an illumination period that varies from one image acquisition cycle to another image



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acquisition cycle. However, Anvi clearly discloses an apparatus having a switching device which switches illuminating conditions of the illuminating light irradiated by the illuminating device (see Figs. 6-7), presets at least two different illuminating conditions and a switching order thereof, and automatically switches the illuminating conditions from a first illuminating condition 94 corresponding to a first image acquisition cycle (T-T1) to a second illuminating condition 96 corresponding to a subsequent image acquisition cycle (T1-T2) (see Fig. 8 and paragraphs 0074-0087). Thus, as broadly as claimed, Anvi meets the limitations of the recited claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Kasztejna whose telephone number is (571) 272-6086. The examiner can normally be reached on Mon-Fri, 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda C.M. Dvorak can be reached on (571) 272-4764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

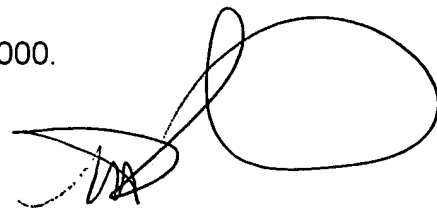
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJK



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